Having described the invention, we claim:

1. A method of controlling the braking function of a vehicle having a first braking circuit associated with driven wheels of the vehicle and having a second braking circuit associated with non-driven wheels of the vehicle, said method comprising the steps of:

sensing a vehicle condition for which braking of the driven wheels is desired independently of operator demand;

in response to said sensing step, electrically actuating a dual brake valve of the vehicle thereby to direct braking pressure to both the first and second braking circuits of the vehicle; and

controlling a plurality of modulators in the vehicle to inhibit delivery of braking pressure to the non-driven wheels of the vehicle.

2. A method as set forth in claim 1 wherein said sensing step comprises sensing wheel spin of at least one of the driven wheels of the vehicle, and said controlling step comprises controlling the plurality of modulators in the vehicle to enable delivery of braking pressure to the at least one driven wheel of the vehicle.

3. A method as set forth in claim 1 wherein said step of electrically actuating a dual brake valve of the vehicle includes directing braking pressure through a relay valve associated with the driven wheels of the vehicle and said controlling step includes controlling modulators associated with the driven wheels of the vehicle to selectively control delivery of braking pressure to the driven wheels of the vehicle.

4. A method as set forth in claim 1 wherein the vehicle braking system includes an electrically energizable actuator associated with the dual brake valve for actuating the dual brake valve in response to said sensing step, the actuator being manually energizable in response to an operator signal independently of the foot of the vehicle operator, and wherein

said step of electrically actuating the dual brake valve comprises electrically energizing the actuator thereby to actuate the dual brake valve.

5. A method as set forth in claim 1 wherein said sensing step comprises sensing roll stability condition of the vehicle, and said controlling step comprises controlling the plurality of modulators in the vehicle to enable delivery of braking pressure to the at least one driven wheel of the vehicle.

6. A method as set forth in claim 5 wherein the dual brake valve has a mechanical override feature by which driver actuation of the vehicle brake pedal by a sufficient amount can override the brake valve actuator.

7. A method as set forth in claim 5 wherein said controlling step comprises controlling the plurality of modulators in the vehicle to enable delivery of braking pressure to all the wheels of the vehicle.

8. A method of making available braking pressure to wheels of a moving vehicle having an air braking system that includes a dual brake valve for, when actuated, simultaneously applying braking pressure to both first and second braking circuits of a vehicle, the dual brake valve being proportionally actuatable by the foot of an operator of the vehicle, said method comprising the steps of:

determining the existence of a dynamic vehicle condition for which it is desired that braking pressure be made available to the vehicle wheels independently of driver braking demand; and, in response,

electrically actuating the dual brake valve thereby to make available braking pressure to the vehicle wheels.

9. A method as set forth in claim 8 wherein said determining step comprises determining the existence of wheel spin of at least one driven wheel of the vehicle, and said

actuating step comprises braking the at least one driven wheel to regain traction for the driven wheel.

10. A method as set forth in claim 9 further comprising the step of controlling a plurality of modulators in the vehicle to enable delivery of braking pressure to one or more driven wheels of the vehicle and to inhibit delivery of braking pressure to one or more non-driven wheels of the vehicle.

11. A method as set forth in claim 8 wherein said determining step comprises determining the existence of a possible rollover condition of the vehicle, and said actuating step comprises braking selected ones of the vehicle wheels to slow the vehicle to prevent rollover of the vehicle.

12. A method as set forth in claim 8 further comprising the step of controlling a plurality of modulators in the vehicle to selectively control delivery of braking pressure to the wheels of the vehicle.

13. A method as set forth in claim 12 wherein said controlling step includes controlling the modulators to enable delivery of braking pressure to one or more driven wheels of the vehicle and to inhibit delivery of braking pressure to one or more non-driven wheels of the vehicle.

14 A method as set forth in claim 8 wherein the vehicle braking system includes an electrically energizable actuator associated with the dual brake valve for actuating the dual brake valve in response to said determining step, the actuator being manually energizable in response to an operator signal independently of the foot of the vehicle operator, and wherein said step of electrically actuating the dual brake valve comprises electrically energizing the actuator thereby to actuate the dual brake valve.

15. A vehicle braking system for a vehicle having a first braking circuit associated with driven wheels of the vehicle and having a second braking circuit associated with non-driven wheels of the vehicle, said system comprising:

a dual brake valve for, when actuated, simultaneously applying braking pressure to both the first and second braking circuits of the vehicle, said dual brake valve being proportionally actuatable by the foot of an operator of the vehicle;

a manually energizable actuator for actuating said dual brake valve independently of the foot of the vehicle operator;

at least one sensor for sensing a dynamic vehicle condition for which it is desired that braking pressure be made available to at least one of the vehicle wheels independently of driver braking demand; and

a controller responsive to said sensor for energizing said actuator electrically to make available braking pressure to the at least one vehicle wheel.

16. A system as set forth in claim 15 wherein said sensor is operative to sense wheel spin of a driven wheel of the vehicle, and said system is operative to make braking pressure available to the driven wheel of the vehicle.

17. A system as set forth in claim 16 further comprising a modulator between said dual brake valve and the driven wheel, said controller being operative to control said modulator to selectively make braking pressure available to the driven wheel.

18. A system as set forth in claim 17 further comprising a modulator between said dual brake valve and a non-driven wheel of the vehicle, said controller being operative to control said modulator to block the application of braking pressure to the non-driven wheel.

19. A system as set forth in claim 15 wherein said sensor is operative to sense a rollover condition of the vehicle, and said system is operative to make braking pressure available to selected ones of the wheels of the vehicle.

20. A system as set forth in claim 19 wherein said system is operative to make braking pressure available to all the wheels of the vehicle.